COURSE DESCRIPTION CARD - SYLLABUS

Course name
Systems of use of UAV [S2LiK1-LC>SUBSP]

Course

Field of study
Aerospace Engineering

Year/Semester
1/1

Area of study (specialization)
Civil Aviation

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
30

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

3,00

Coordinators

inż. Filip Orzeł

Lecturers

Prerequisites

Knowledge: Basic knowledge of the influence of harmful exhaust gas compounds and noise on humans. Skills: The ability to solve research problems using scientific methods. The ability to find cause-and- effect relationships based on the acquired knowledge. Social competences: The ability to precisely formulate questions; the ability to define important priorities in solving the tasks set for him; ability to formulate a research problem and search for its solution, independence in problem-solving, ability to cooperate in a group.

Course objective

Detailed knowledge and analysis of issues related to the use of unmanned aerial vehicles. Analysis of the possibilities and scope of the use of unmanned aerial vehicles. Analysis of the possibility of applying the current technique in unmanned aerial vehicle systems

Course-related learning outcomes

Knowledge:
1. Has extended knowledge necessary to understand the profile subjects and specialist knowledge about the construction, methods of construction, production, operation, air traffic management, safety systems, impact on the economy, society and the environment in the field of aviation and cosmonautics

for selected specialties: Civil Aviation, UAV.
2. Has detailed knowledge related to selected issues in the field of manned and unmanned aerial vehicles, in the field of on-board equipment, control systems, communication and registration systems, life support systems, automation of individual systems
3. has detailed knowledge related to selected issues in the field of manned and unmanned spacecraft construction, in the field of on-board equipment, control systems, communication and recording systems, life support systems, satellite navigation systems, teletection, image recognition, automation of individual systems.
4. Has a basic knowledge of automation systems, microcontrollers, control algorithms, automatic machines and industrial robots, electronic navigation systems used in machines and wired and wireless communication systems in local computer networks used in aviation and astronautics.
5. Has ordered, theoretically founded specialist knowledge in the field of on-board equipment: as well as on-board and terrestrial electronic communication systems, remote sensing systems, observation systems, satellite navigation systems.

Skills:
1. is able to communicate using various techniques in the professional environment and other environments using the formal notation of construction, technical drawing, concepts and definitions of the scope of the study field .
2. has the ability to self-educate with the use of modern teaching tools, such as remote lectures, websites and databases, teaching programs, e-books.
3. can obtain information from literature, the Internet, databases and other sources. Can integrate the obtained information, interpret and draw conclusions from it, and create and justify opinions

Social competences:
1. Understands the need for lifelong learning; can inspire and organize the learning process of other people.
2.Is ready to critically evaluate the knowledge and content received, recognize the importance of knowledge in solving cognitive and practical problems, and consult experts in case of difficulties in solving the problem on its own.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Written test covering issiues discussed during the classes. Laboratory classes pass.

Programme content

Identification of unmanned aerial systems, development of unmanned aerial vehicles, terminology and classifications, components of the unmanned aerial vehicle and aircraft system. Selected areas of civil unmanned aerial systems applications, capabilities and limitations of unmanned aerial vehicles in civil applications, prevention of adverse events and crisis management, protection of critical infrastructure, ensuring internal security, support for scientific research. International regulatory areas for unmanned aerial vehicles, main legal areas related to the operation of remotely controlled air systems, aviation personnel licensing. Overview of unmanned aerial vehicles and their development prospects

Course topics

none

Teaching methods

Informative (conventional) lecture (providing information in a structured way) - may be of a course (introductory) or monographic (specialist) character
Laboratory method

Bibliography

Basic
1. Tadeusz Zieliński, Funkcjonowanie bezzałogowych systemów powietrznych w sferze cywilnej. Silva

Rerum 2014 r.
2. Ustawa z dnia 3 lipca 2002 r. Prawo lotnicze (Dz. U. z 2013 r. poz. 1393)
Additional
1. Civil Code

Breakdown of average student's workload

	Hours	ECTS
Total workload	85	3,00
Classes requiring direct contact with the teacher	55	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,00